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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/776,230

02/12/2004

Hirokazu Takagi

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EXAMINER

COVINGTON, RAYMOND K

ART UNIT

PAPER NUMBER

1625

NOTIFICATION DATE

DELIVERY MODE

09/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/776,230 | Applicant(s) TAKAGI ET AL. | |
| | Examiner Raymond Covington | Art Unit 1625 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: that the process is not drawn to producing hexafluoropropylene oxide but to purifying hexafluoropropylene oxide.

Claims 17-20, 23 and 25-26 recites the limitation "purified" in line 1 thereof. There is insufficient antecedent basis for this limitation in the claim from which they depend. Insertion of the term purified into claim 1 will overcome this rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 10 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4288376.

The claims 1, 4, 10 and 27 are drawn to a process for producing hexafluoropropylene oxide which comprises: contacting a reaction product containing hexafluoropropylene oxide obtained by reacting hexafluoropropylene with oxygen, with at one adsorbent selected from the group consisting of activated carbon, a Group I metal oxide, a Group 2 metal oxide, an oxide of Zr and an oxide of Si whereas claim 28 is drawn to hexafluoropropylene oxide made by said process. Further limitation include "adsorbent which does not substantially contain a transition metal oxide or aluminum oxide which act as an isomerization catalyst for hexafluoropropylene oxide" (claim 4), "the adsorbent is an adsorbent having adsorbed moisture preliminary removed" (claim 8), "the adsorbent having adsorbed moisture preliminarily removed, is an adsorbent having the moisture removed by feeding an inert gas which contains substantially no moisture" (claim 9), "the reaction product containing hexafluoropropylene oxide is contacted with the adsorbent in a gas phase" (claim 10), "the reaction product ... is subject to at least one pretreatment selected from distillation, alkali washing and dehydration treatment by means of a dehydrating agent, and the reaction product thus

pretreated, is contacted with the adsorbent" (claim 11) and "which is a process for purifying hexafluoropropylene oxide" (claim 27).

USP 4,288,376 (issue date September 08, 1981) teaches a process for preparing hexafluoropropene oxide (which is commonly known as hexafluoropropylene oxide or Registry Number 428-59-1) by reacting hexafluoropropene with oxygen in the presence of at least one barium compound selected from the group consisting of barium oxide, barium hydroxide and barium salt as a catalyst (abstract and claims). USP'376 discloses that the barium compound to used as the catalyst in this invention is "preferably heated under the stream of an inert gas (e.g., nitrogen) at a temperature not lower than the reaction temperature ..." (column 1, lines 51-55) and "From the reaction mixture, hexafluoropropene oxide can be isolated by a conventional method, for example extraction and/or distillation" (column 2, lines 23-25). Particularly, Example 4 discloses that the mixture containing barium oxide is "added to deionized water, heated, stirred to emulsify them enough and then dried at 100 Celsius ... for 5 hours in an electric furnace ... heated under nitrogen stream at 400 celcium ... a gaseous mixture of hexafluoropropene and oxygen ..." (Example 4).

Although US '376 does not specifically mention barium oxide as

"adsorbent", such characteristic or property is deemed to be inherent to the barium oxide. Thus, reference anticipates the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4288376 in view of US 4287128.

US 4288376 is applied as in the above 102 rejection. USP 4287128 discloses a process of preparing haloalkyl epoxide and oxaziranes (e.g., hexafluoropropylene oxide) by reacting a catalyst such as a perhaloalkene or alkyl imine and chlorine gas with Group IA, IIA metal oxide, carbonate or bicarbonate (abstract and column 2, lines 4-16).

As shown by USP1128, other metal oxides (Group IA and IIA) are known to be useful as catalyst in preparing hexafluoropropylene oxide. Thus, one would have been motivated to combine these references and make the modification because they are drawn to same technical fields (constituted with same ingredients

and share common utilities), and pertinent to the problem which applicant concerns about. MPEP 2141 .01 (a).

With respect to the specific surface area of "adsorbent", the specific moisture level in said product, the specific amounts of purified hexafluoropropylene oxide or total amount of impurities and/or the specific amount of hydrogen fluoride (claims 5-7 and 13-26), generally differences in concentration or dosage amounts of known active ingredient will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such features or properties is critical.

Relevant Prior art of record

US 6034207 or USP 6420515 ("Background of the Invention")discloses activated carbon as a catalyst in preparing hexafluoropropene oxide polymer.

US 5084146 discloses molecular sieves as the drying agent (column 5, line 4).

Remaining claims are rejected too the extent they depend on a rejected base claim herein above.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Covington whose telephone number is (571) 272-0681. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres at telephone number (571) 272-0867.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/R. C./
Examiner, Art Unit 1625
RKC

/Janet L. Andres/
Supervisory Patent Examiner,
Art Unit 1625